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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,921	03/13/2006	Stephen B. Murphy	103068-0003U	7285
24267	7590	03/22/2011		
CESARI AND MCKENNA, LLP 88 BLACK FALCON AVENUE BOSTON, MA 02210			EXAMINER DANEGA, RENEE A	
			ART UNIT 3736	PAPER NUMBER
			MAIL DATE 03/22/2011	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/565,921	<b>Applicant(s)</b> MURPHY, STEPHEN B.	
	<b>Examiner</b> Renee Danega	<b>Art Unit</b> 3736	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2011.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 4-9, 12-14 and 22-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4-9, 12-14 and 22-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 4-6, 9, 14, and 22-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Konishi et al. ("Determination of acetabular coverage of the femoral head with use of a single anteroposterior radiograph. A new computerized technique") in view of Sarin et al. (US 20040254586).

- Regarding claims 4, and 14 and 22, Konishi teaches a method executed using a data processor for determining transaxial rotation of a pelvis from a single fluoroscopic image without using a patient tracker comprising receiving a fluoroscopic image of said pelvis in the near AP direction; defining first and second landmarks of said pelvis on said image, said landmarks separated from each other in at least an anterior-posterior direction (Figure 3); determining the axial displacement of said landmarks on said image; and using said displacement to calculate with said data processor (C++ computer program on a personal computer) the transaxial rotation of the pelvis with respect to the plane of said fluoroscopic image (Appendix II) (page 1319) (page 1321 right column). Konishi doesn't expressly teach using first and second landmarks to find the axial rotation

in the near AP image. However, Sarin teaches a method of identifying landmarks separated from each other in at least an anterior posterior plane and using the landmarks to calculate axial and transaxial rotations of the pelvis in order to determine the three dimensional angular orientation of the pelvis to assist in surgery [0011] [0025] [0041] [0042] [0051] [0052]. It would have been obvious in view of Sarin to calculate both axial and transaxial rotations in Konishi in order to determine three dimensional angular orientation of the pelvis to assist in surgery

- Regarding claims 5-6 and 9 and 24-25 Konishi teaches a method executed using a data processor for determining transaxial rotation of a pelvis from a single fluoroscopic image without using a patient tracker comprising receiving a fluoroscopic image of said pelvis in the near AP direction; defining first and second landmarks of said pelvis on said image, said landmarks separated from each other in at least an anterior-posterior direction (Figure 3); determining the axial displacement of said landmarks on said image; and using said displacement to calculate with said data processor (C++ computer program on a personal computer) the transaxial rotation of the pelvis with respect to the plane of said fluoroscopic image (Appendix II) (page 1319) (page 1321 right column). Konishi teaches identifying right and left landmarks and further contemplates a variety of different landmarks being used but doesn't expressly teach successful use of alternative landmarks. However, Sarin teaches a method for

calculating axial and transaxial rotations wherein the first landmark is the pubic symphysis and the second landmark to comprise the midpoint of a line between the image points on the left and right sacroiliac joints [0025].

It would have been obvious in view of Sarin to try the pubic symphysis and sacroiliac joints as different landmarks in Konishi in order to calculate pelvic tilt.

- Regarding claims 7-8 and 12-13, and 26-27 Konishi teaches normalizing the data using the distance between the teardrops (corrected values of measurements) (Figure 2C).
- Regarding claim 23, Konishi teaches accounting for the distance between the x-ray source and the image plane in calculating pelvic tilt (Figure 1).

### ***Response to Arguments***

Applicant's arguments filed 1/13/11 have been fully considered but they are not persuasive. Konishi teaches finding a transaxial rotation using particular landmarks on a fluoroscopic image. A person with the Konishi reference and with a fluoroscopic image in front of them looking at the Sarin reference with ordinary skill would use the landmarks described in Sarin and also present in the image of Konishi to determine an axial rotation.

An improvement in technology of using markers to create a model as taught by Sarin doesn't make it non obvious to use the same landmarks in a fluoroscopic technique where the same landmarks are present. One of ordinary skill would not be led to believe that the landmarks chosen and shown workable by Sarin would be

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unworkable in Konishi merely because Sarin was using a marker system rather than an image system and applying the particular landmark selection to an older technology is not novel. Additionally, even though the claims don't use a tracker it is known in the art that the marker system can be used in conjunction with fluoroscopic imaging to track positions of the marker on the image Seeley et al. (US 20030130576) and therefore analogous art providing incentive to combine concepts from both.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Renee Danega whose telephone number is (571)270-3639. The examiner can normally be reached on Monday through Thursday 8:30-5:00 eastern time.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Max Hindenburg can be reached on (571) 272-4726. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RAD

/Max Hindenburg/  
Supervisory Patent Examiner, Art Unit 3736